

REMARKS

Claims 1-27 and 32 are rejected. Claims 1 and 26 have been amended. Claims 28-31 have been withdrawn from further consideration. Claims 1-32 are presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

Rejection under 35 U.S.C. § 103(a) over Richter in view of Gertner:

In Section 2-4 of the Office Action dated December 11, 2007, the Examiner has rejected claims 1, 2, 4-8, and 26 under 35 U.S.C. §102(e) as being unpatentable over Richter et al. (Advanced Materials (2000) 12:507-510) in view of Gertner et al. (U.S. Patent Pub. No. 2003/0060873). This rejection is respectfully traversed.

As indicated on page 5 of the Office Action dated December 11, 2007, Richter fails to teach a method of contacting nucleic acid molecule with nickel or nickel alloy. Gertner further fails to teach this limitation. Referring to Gertner paragraphs [0059] – [0062] and Fig. 5 step 44, the reference merely teaches electroless plating of a substrate surface, not of a nucleic acid molecule as presently claimed. Gertner teaches coating the entire substrate in metal.

Furthermore, neither Richter nor Gertner teach hybridizing the nucleic acid molecule to one or more sets of two oligonucleotide probes as presently claimed. Therefore, it is requested that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. § 103(a) over Richter in view of Gertner further in view of Tu:

In Section 5 of the Office Action dated December 11, 2007, the Examiner has rejected claim 3 under 35 U.S.C. §102(e) as being unpatentable over Richter et al. (Advanced Materials (2000) 12:507-510) in view of Gertner et al. (U.S. Patent Pub. No. 2003/0060873) and further in view of Tu et al. (U.S. Pat. No. 5,945,527). This rejection is respectfully traversed.

Claim 3 benefits from dependency on claim 1, which as discussed above, is patentable. Therefore, it is respectfully requested that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. § 103(a) over Fish in view of Richter further in view of Gertner:

In Section 6 of the Office Action dated December 11, 2007, the Examiner has rejected claims 9, 12 and 16-19 under 35 U.S.C. §102(e) as being unpatentable over Fish (U.S. Pat. Pub. No. 2004/0132220) in view of Richter et al. (Advanced Materials (2000) 12:507-510) and further in view of Gertner et al. (U.S. Patent Pub. No. 2003/0060873). This rejection is respectfully traversed.

The Examiner indicates that Fish teaches that a target nucleic acid molecule, which has two sequences, a first sequence complementary to a first probe attached to the first electrical conductor and a second sequence complementary to a second probe attached to the second electrical conductor, can bind to both probes as evidenced by parts 15a and 15b shown in figs. 2C and 2D of Fish. However, Fish discloses utilizing two distinct analytes and a conductive material to form a continuous connection. As indicated by Fish paragraph [0092], lines 9-12, both analytes 15a and 15b must be present. By contrast, the instant invention claims a target nucleic acid molecule that has two sequences capable of binding two distinct probes. Fish merely discloses an analyte capable of binding one probe attached to an electrode 16 and the carbon nano-tube 26b. The target nucleic acid molecule of the instant invention spans the gap between the two probes without the need for an interconnected conductive material. Therefore, it is respectfully requested that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. § 103(a) over Fish in view of Richter further in view of Gertner and further in view of Tu:

In Section 7 of the Office Action dated December 11, 2007, the Examiner has rejected claim 11 under 35 U.S.C. §102(e) as being unpatentable over Fish (U.S. Pat. Pub. No. 2004/0132220) in view of Richter et al. (Advanced Materials (2000) 12:507-510) and further in view of Gertner et al. (U.S. Patent Pub. No. 2003/0060873) and further in view of Tu et al. (U.S. Pat. No. 5,945,527). This rejection is respectfully traversed.

As discussed above, Fish fails to teach a target nucleic acid molecule having two sequences capable of binding both probes attached to a first and second electrical conductor. Claim 11 benefits from dependency on Claim 1, which as discussed above, is patentable. Therefore it is respectfully requested that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. § 103(a) over Fish in view of Zocchi as evidenced by Richter:

In Section 8 of the Office Action dated December 11, 2007, the Examiner has rejected claims 9, 12 and 16-19 under 35 U.S.C. §102(e) as being unpatentable over Fish (U.S. Pat. Pub. No. 2004/0132220) in view of Zocchi et al. (U.S. Pat Pub. No. 2004/0241699) as evidenced by Richter et al. (Advanced Materials (2000) 12:507-510). This rejection is respectfully traversed.

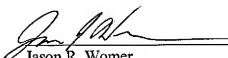
As discussed above, Fish fails to teach a target nucleic acid molecule having two sequences capable of binding both probes attached to a first and second electrical conductor. Neither Zocchi nor Richter teaches this limitation. Therefore, it is respectfully requested that this rejection be reconsidered and withdrawn.

Conclusion:

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Respectfully submitted,

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